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Isle Royale

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Common loon
© DAVID GUYMON

*This shard of a continent
becalmed in the green
fresh-water sea is indeed
royal, isolate, and
supreme.*

T. Morris Longstreth
The Lake Superior
Country, 1924

FROM THE NORTHWEST CORNER OF LAKE SUPERIOR A ROCKY ARCHIPELAGO RISES. THE COLD, DEEP WATERS OF ONE OF THE WORLD'S LARGEST LAKES BOTH ISOLATE AND PROTECT THIS PLACE. ITS DISTANCE FROM THE MAINLAND HAS LIMITED THE DIVERSITY OF SPECIES— ONLY THOSE ABLE TO MAKE THE CROSSING CAN CALL THE ISLAND HOME. HUMANS TOO MUST MAKE THE CROSSING, AND HAVE BEEN DOING SO FOR AT LEAST 4,500 YEARS. ISLE ROYALE'S GEOGRAPHIC SEPARATION PROTECTS IT FROM OUTSIDE INFLUENCES, BUT IT IS NOT IMPENETRABLE. HIGH CONTAMINANT LEVELS IN INLAND LAKES AND REDUCED WINTER ICE COVER REMIND US THAT ACTIONS ELSEWHERE CONNECT ISLE ROYALE WITH THE REST OF THE WORLD. HOWEVER ISOLATED, ISLE ROYALE IS NOT IMMUNE TO HUMAN-DRIVEN CHANGE.

Kayaker on Lake Superior
© THOMAS AND GLAINE JONES



Isle Royale

Range of devil's club
Disjunct plant species are closely related but widely separated from each other geographically.

Devil's club
© MARTIN DE JONGE/LANTING

From Isolation, Novelty

You will see the red squirrel more often than any other mammal on Isle Royale. How did it make the crossing from the mainland? No one knows—but because of its long isolation from its relatives the Isle Royale red squirrel is now considered a subspecies. Smaller and less red than its mainland counterparts, it makes different sounds. Its subspecies name, *regalis* (regal) suits its self-important behavior. Other mammals on Isle Royale, like the American marten, are also genetically distinct from mainland species.

Evolving Wilderness

Early human crossings of Lake Superior to Isle Royale presented both risks and rewards. Pre-contact cultures, and later the Ojibwe, harvested copper deposits, an abundant fishery, and other resources. Commercial fishermen and copper miners, lumberjacks, and lighthouse keepers depended upon the island for their livelihood. Cool summer temperatures and wilderness pursuits enticed vacationers in the early 1900s. Today Isle Royale National Park is a designated wilderness and biosphere reserve, attracting hiking, paddling, and backpacking enthusiasts as well as boaters, divers, and others.



Isle Royale red squirrel
© JOHN AND ANA MALKAN

Plants Far from Home

Some plant species that thrive along Isle Royale's cooler shores are not typically found this far south. Northern paintbrush and three-toothed saxifrage, both arctic disjuncts, were probably stranded when the last continental ice sheet retreated.



Three-toothed saxifrage
MPS



Thimbleberry
© TONY FENST



Northern paintbrush
© MARK ECKERT

Island Laboratory

Scientist Durward Allen, who founded the Isle Royale Wolf-Moose Study in 1958, expressed one value of islands as laboratories when he described them as places "where the animals you are counting and studying do not wander away."

Isle Royale's isolation shapes its ecosystem. It excludes some species. Others arrive by chance. Some that could make the trip rarely do so. As a result, less than half of the over forty mammal species on the surrounding mainland have populations on Isle Royale today. Fewer species result in fewer relationships among species—creating opportunities for research and long-term monitoring in a relatively simple ecosystem.

Studies on the island have increased our understanding of predator-prey interactions and their cascading effects

on other species. Monitoring of bird and fish populations, water levels, and water quality sheds light on the consequences of global changes. Research revealing a rainbow of colors in the island's garter snake population rekindles our wonder for the vibrancy of the natural world.

Nothing stays the same for very long on an island. A little over a hundred years ago, a survey of Isle Royale's mammals would have resulted in a list quite different from the present one. Moose would be noticeably absent. Caribou would represent the large prey species, while coyote and lynx would serve as the predators.

This ecosystem may not be as simple as it first appears. On Isle Royale, a world within our world, all life exists in a dynamic web.



Moose
© CARL LUNDGREN

Chippewa Harbor
© JOHN AND ANA MALKAN



ROYAL BEGINNINGS

One billion years ago, Earth's crust ripped open here and released lava, which hardened into a slab of basalt rock. This cycle repeated more than four hundred times over millions of years, creating a giant layer cake of rock. Later, massive geologic forces cracked and shifted the basalt layers, tilting them upward (see *illustration at right*).

Huge, miles-thick ice sheets advanced and retreated during the last three million years. The crushing, dragging action of the ice cut deep gouges into the softer rock in between the harder basalt layers. As the last major glacier retreated from the region around 11,000 years ago, it left a pattern of parallel ridges and valleys.

A deep basin surrounding the rock layers trapped the glacier's melting ice. Meltwater filled the basin, creating one of Earth's largest lakes and immersing all but the upper edges of some layers. These "shards of the continent" that rise from Lake Superior form the Isle Royale archipelago. Despite the islands' isolation from the mainland by the lake's deep, icy water, life took hold.

An archipelago is a group or chain of islands. Isle Royale National Park is made up of more than 400 small islands.

Blake Point at Isle Royale's eastern end, viewed from the air.

ABOVE THE SHORELINE

Sugar maples densely cover some upland slopes.

More than 600 types of fichen, grow on exposed bedrock and dangle beardslike from trees.

Paper birch is among the first trees to colonize areas newly opened up by fire or windthrow.

As the last continental ice sheet retreated across the region, it helped create the set of conditions in which life developed. It left glacial till on the main island's southwestern end, and scoured the northeastern end. Resulting habitats range from ridges and uplands to swamps and lakes; gentle, sun-warmed slopes to steep, shaded, lichen-covered drops.

Wetlands nestled in Isle Royale's narrow valleys hum with beaver activity. Carnivorous plants abound in floating bogs. Long-isolated inland lakes are home to native muskells, giant sponges, and species of fish not found in Lake Superior.

Floating bogs support the carnivorous pitcher plant.

© MIKE WANG



UNDER THE WATER

The park's boundary stretches 4.5 miles from the archipelago's edges into Lake Superior. Over 75 percent of Isle Royale's 850 square miles is underwater, and the ridge and valley topography that defines life on land continues uninterrupted. Varying water depths result in a wide range of water temperatures. These affect water currents and contribute to Isle Royale's diverse fishery—which includes over 60 species.



Coaster brook trout can weigh up to ten pounds.

© GUY LAWRENCE

The protection of native species depends upon our actions, not only in Isle Royale National Park, but around the globe.

See ridge and valley topography through the lake's crystal-clear water.

© CARL TEBBARI

Islands upon islands on the horizon.

© T. LINDEN/STOCK/GETTY IMAGES

FIREARMS For firearms regulations check the park website.

ACCESSIBILITY We strive to make our facilities, services, and programs accessible to all. For information contact the park prior to your visit.

EMERGENCIES Check the park website for current emergency numbers.

National Park Foundation. Join the park community.

www.nps.gov/isro

MORE INFORMATION Isle Royale National Park 800 E. Lakeshore Dr. Houghton, MI 49931 906-482-0984

Isle Royale National Park is one of over 400 parks in the National Park System. To learn more about national parks and National Park Service programs in America's communities, visit www.nps.gov.

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GETTING HERE The park is open April 16 through October. Public transportation is by boat or sea-plane only. Reservations are always required. Passenger ship service is available from Copper Harbor and Houghton, MI, and Grand Portage, MN. Seaplane service is available from Houghton, MI. See the park website for more information.

CUSTOMS US citizens returning from Canada and Canadian visitors to the park are required to clear US Customs at Windigo and Rock Harbor ranger stations.

FOR YOUR SAFETY AND TO PRESERVE YOUR ISLAND WILDERNESS No pets within park boundaries. • No wheeled vehicles (except wheelchairs), bicycles, or portaging devices on trails. • Observe park wildlife from a safe and respectful distance. Keep wildlife wild: secure your food. • Enjoy the thrill of discovery, but leave all park resources where you find them for others to experience. • Permits are required for all overnight stays at park campgrounds, docks, and anchorages. The park is remote. Plan carefully and exercise caution to prevent ac-

